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NOTIFICATION CONCERNING
TRANSMITTAL OF COPY OF INTERNATIONAL
PRELIMINARY REPORT ON PATENTABILITY
(CHAPTER I OF THE PATENT COOPERATION
TREATY)

(PCT Rule 44bis.1(c))

From the INTERNATIONAL BUREAU

To:

HENNEMAN, Larry, E., Jr.
Henneman & Saunders
714 W. Michigan Ave.
Three Rivers, MI 49093
ETATS-UNIS D'AMERIQUEDate of mailing (*day/month/year*)
19 July 2007 (19.07.2007)Applicant's or agent's file reference
0025-013PCT

IMPORTANT NOTICE

International application No.
PCT/US2005/005139International filing date (*day/month/year*)
18 February 2005 (18.02.2005)Priority date (*day/month/year*)
20 February 2004 (20.02.2004)

Applicant

FLEXTRONICS INTERNATIONAL USA, INC. et al

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Nora Lindner

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 0025-013PCT	FOR FURTHER ACTION	See item 4 below
International application No. PCT/US2005/005139	International filing date (<i>day/month/year</i>) 18 February 2005 (18.02.2005)	Priority date (<i>day/month/year</i>) 20 February 2004 (20.02.2004)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant FLEXTRONICS INTERNATIONAL USA, INC.		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).																								
2.	This REPORT consists of a total of 7 sheets, including this cover sheet.																								
In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																									
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td style="width: 60%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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<input type="checkbox"/>	Box No. VIII	Certain observations on the international application																							
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Date of issuance of this report 10 July 2007 (10.07.2007)</td> <td style="width: 50%;">Authorized officer</td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 10px;">Nora Lindner</td> </tr> <tr> <td colspan="2">e-mail: pt02.pct@wipo.int</td> </tr> </table>	Date of issuance of this report 10 July 2007 (10.07.2007)	Authorized officer	Nora Lindner		e-mail: pt02.pct@wipo.int	
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Nora Lindner							
e-mail: pt02.pct@wipo.int							

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:
LARRY E. HENNEMAN, JR.
HENNEMAN & SAUNDERS
714 W. MICHIGAN AVE.
THREE RIVERS, MI 49093

Date of mailing
(day/month/year) **12 JUN 2007**

Applicant's or agent's file reference

0025-013PCT

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/US05/05139

International filing date (day/month/year)

18 February 2005 (18.02.2005)

Priority date (day/month/year)

20 February 2004 (20.02.2004)

International Patent Classification (IPC) or both national classification and IPC

IPC: **H04N 5/225(2007.01)**

USPC: 348/340,374

Applicant

FLEXTRONICS INTERNATIONAL USA, INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
Facsimile No. (571) 273-3201

Date of completion of this opinion

09 November 2006 (09.11.2006)

Authorized officer

Ngoc-Yen Vu

Telephone No. (571) 272-6950

Form PCT/ISA/237 (cover sheet) (April 2005)

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US05/05139

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
- ☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
- ☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
- ☐ filed together with the international application in electronic form.
- ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US05/05139

Box No. V Reasoned statement under Rule 43 *bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims NONE YES
Claims 1-28 and 30-39 NO

Inventive step (IS)

Claims NONE YES
Claims 1-39 NO

Industrial applicability (IA)

Claims 1-39 YES
Claims NONE NO

2. Citations and explanations:

Please See Continuation Sheet

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US05/05139

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

V. 2. Citations and Explanations:

Claims 1-28 and 30-39 lack novelty under PCT Article 33(2) as being anticipated by US 2002/0145676 (Kuno et al.).

1. As to claim 1, Kuno et al. teaches a camera module apparatus, comprising: a camera integrated circuit chip 1 (see Fig. 1); a lens 3; and a molding 4 formed on the integrated circuit chip for holding the lens 3 such that the lens is positioned thereby in relation to the integrated circuit chip (see Fig. 1).

As to claim 2, see claim 1 and note that Kuno et al. further teaches the camera module apparatus of claim 1, wherein: the camera integrated circuit chip 1 is mounted on a printed circuit board 2 (see Fig. 1).

As to claim 3, see claim 1 and note that Kuno et al. further teaches the camera module apparatus of claim 1, further comprising: a protective cover 7 over the integrated circuit chip 1 (see Fig. 1).

As to claim 4, see claim 1 and note that Kuno et al. further teaches the camera module apparatus of claim 3, wherein: the protective cover 7 is a molded spacer (see Fig. 1 and note that 7 is a spacer between the molding 4 and the integrated circuit 1).

As to claim 5, see claim 3 and note that Kuno et al. further teaches the camera module apparatus of claim 3, wherein: the protective cover 7 is a glass sheet (see [0060]).

As to claim 6, see claim 1 and note that Kuno et al. further teaches the camera module apparatus of claim 1, wherein: the molding 4 has a recess for receiving the lens 3 (see Fig. 1 and note that the bottom of lens 3 intrudes into the opening in the molding 4).

As to claim 7, see claim 1 and note that Kuno et al. further teaches the camera module apparatus of claim 1, wherein: the lens 3 is held in place on the molding 4 by an adhesive (see [0065]).

As to claim 8, see claim 1 and note that Kuno et al. further teaches the camera module apparatus of claim 1, wherein: the molding 4 has a recess for positioning the lens 3 relative to the integrated circuit chip 1 (see Figs. 1 and 4 and note that recess between contact surfaces 4c in which the bottom of the lens is fitted into).

As to claim 9, Kuno et al. teaches an integrated camera circuit 1 and lens module 3, comprising: a camera integrated circuit 1; and

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US05/05139

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

a lens assembly 3; and wherein the lens assembly 3 is affixed (via 4) to the integrated circuit 1 (see Fig. 4).

As to claim 10, see claim 9 and note that Kuno et al. further teaches the integrated camera circuit and lens module of claim 9, wherein: the lens assembly 3 is rigidly affixed to the integrated circuit 1 such that there is a gap between at least a portion of the lens assembly and a sensor array of the integrated circuit (see Figs. 1 and 4).

As to claim 11, see claim 9 and note that Kuno et al. further teaches the integrated camera circuit and lens module of claim 9, wherein: the lens assembly 3 is attached to the integrated circuit 1 by a molded component 4 (see Figs. 1 and 4).

As to claim 12, see claim 11 and note that Kuno et al. further teaches the integrated camera circuit and lens module of claim 11, wherein: the lens assembly 3 is attached to the molding 4 by an adhesive ([0065]).

As to claim 13, see claim 9 and note that Kuno et al. further teaches the integrated camera circuit and lens module of claim 9, wherein: the integrated circuit 1 is mounted on a circuit board 2 (see Fig. 1).

As to claim 14, see claim 9 and note that Kuno et al. further teaches the integrated camera circuit and lens module of claim 9, further comprising: a protective cover 7 over the integrated circuit chip 1 (see Fig. 1).

As to claim 15, see claim 14 and note that Kuno et al. further teaches the integrated camera circuit and lens module of claim 14, wherein: the protective cover 7 is a molded spacer (see Fig. 1 and note that 7 is a spacer between the molding 4 and the integrated circuit 1).

As to claim 16, see claim 14 and note that Kuno et al. further teaches the integrated camera circuit and lens module of claim 14, wherein: the protective cover 7 is a glass sheet ([0060]).

As to claim 17, Kuno et al. teaches a method for producing a camera module, comprising: molding a receptacle 4 over an integrated circuit 1; inserting a lens assembly 3 into the receptacle 4; and securing the lens assembly into the receptacle ([0065]).

As to claim 18, see claim 17 and note that Kuno et al. further teaches the method of claim 17, wherein: the lens assembly 3 is secured to the receptacle 4 by an adhesive ([0065]).

As to claim 19, see claim 17 and note that Kuno et al. further teaches the method of claim 17, wherein: the integrated circuit 1 is secured to a circuit board 2 before the receptacle is molded over the integrated circuit 1 ([0070]).

As to claim 20, see claim 17 and note that Kuno et al. further teaches the method of claim 17, wherein: the receptacle 4 includes a recessed portion for receiving the lens assembly 3 (see Figs. 1 and 4).

As to claim 21, see claim 20 and note that Kuno et al. further teaches the method of claim 20, wherein: the recess portion includes a projection for fixing the distance of the lens assembly 3 from the integrated circuit 1 (see Figs. 1 and 4).

As to claim 22, see claim 17 and note that Kuno et al. further teaches the method of claim 17, wherein: the camera module is affixed to a flex circuit 2 ([0058]).

As to claim 23, see claim 17 and note that Kuno et al. further teaches the method of claim 17, further comprising: placing a protective cover 7 over the integrated circuit 1 (see Figs. 1 and 4).

As to claim 24, see claim 23 and note that Kuno et al. further teaches the method of claim 23, wherein: the step of placing the protective cover 7 over the integrated circuit 1 occurs during the step of molding a receptacle 4 over the integrated circuit 1 (see Figs. 1 and 4).

As to claim 25, see claim 23 and note that Kuno et al. further teaches the method of claim 23, wherein: the protective cover is a molded spacer (see Fig. 1 and note that 7 is a spacer between the molding 4 and the integrated circuit 1).

As to claim 26, see claim 23 and note that Kuno et al. further teaches the method of claim 23, wherein: the protective cover is a glass plate ([0060]).

As to claim 27, Kuno et al. teaches a camera apparatus, comprising: an integrated circuit camera apparatus having thereon a photosensitive array 1a; and a lens assembly 3 for focusing light on the photosensitive array 1a; wherein the lens assembly is rigidly affixed on the integrated circuit camera apparatus (see Figs. 1 and 4).

As to claim 28, see claim 27 and note that Kuno et al. further teaches the camera apparatus of claim 27, wherein: the lens assembly 3 has a housing 4 for receiving at least one lens (see Figs. 1 and 4).

**WRITTEN OPINION OF THE
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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

As to claim 30, see claim 27 and note that Kuno et al. further teaches the camera apparatus of claim 27, wherein: the integrated circuit camera apparatus is affixed to a circuit board 2 (see Figs. 1 and 4).

As to claim 31, see claim 27 and note that Kuno et al. further teaches the camera apparatus of claim 27, wherein: the integrated circuit camera apparatus is affixed to a circuit board 2; and a lens assembly receiving apparatus 4 is affixed to the circuit board 2 (see Fig. 1 and 4).

As to claim 32, see claim 31 and note that Kuno et al. further teaches the camera apparatus of claim 31, wherein: the lens assembly receiving apparatus 4 is a molded receptacle ([0075]).

As to claim 33, see claim 31 and note that Kuno et al. further teaches the camera apparatus of claim 31, wherein: the lens assembly 3 is rigidly affixed within the lens assembly receiving apparatus 4 (see Figs. 1 and 4).

As to claim 34, see claim 31 and note that Kuno et al. further teaches the camera apparatus of claim 31, wherein: the lens assembly 3 is affixed within the lens assembly receiving apparatus 4 by an adhesive ([0065]).

As to claim 35, see claim 27 and note that Kuno et al. further teaches the camera apparatus of claim 27, further comprising: a protective cover 7 fixed between the integrated circuit camera apparatus 1 and the lens assembly 3 (see Figs. 1 and 4).

As to claim 36, see claim 35 and note that Kuno et al. further teaches the camera apparatus of claim 35, wherein: the protective cover 7 is a molded spacer (see Fig. 1 and note that 7 is a spacer between the molding 4 and the integrated circuit 1).

As to claim 37, see claim 35 and note that Kuno et al. further teaches the camera apparatus of claim 35, wherein: the protective cover 7 is a glass plate ([0060]).

As to claim 38, see claim 35 and note that Kuno et al. further teaches the camera apparatus of claim 35, wherein: the protective cover 7 is held in place by an overmold 4 formed over the integrated circuit camera apparatus (see Figs. 1 and 4).

As to claim 39, Kuno et al. teaches a camera module apparatus, comprising: a camera integrated circuit chip 1; a lens 3; and means for holding the lens 4 such that the lens is positioned thereby in relation to the integrated circuit chip (see Figs. 1 and 4).

Claim 29 lacks an inventive step under PCT Article 33(3) as being obvious over US 2002/0145676 (Kuno et al.) in view of 2003/0137595 (Takachi).

As to claim 29, see claim 27 and note that what Kuno et al. doesn't teach is the lens assembly having a housing for receiving two lenses. However, Takachi teaches a lens assembly for an image sensor module that has a housing for receiving two lenses (see Fig. 2 and [0028]). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the housing of Kuno et al. in such a fashion so as to hold two lenses as is done in the invention of Takachi as compared to the case where a single lens is used, the use of the two lenses of Takachi can increase the number of apertures, prevent the distortion of a captured image and provide a clear captured image.

Claims 1-39 meet the criteria set out in PCT Article 33(4), and thus meet industrial applicability because the subject matter claimed can be made or used in industry.